

RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
GROUP 2153
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

LUDWIG, LESTER F., et al.

Appln. No.: 09/072,549

Confirmation No.: 6658

Group Art Unit: 2153

Filed: May 05, 1998

Examiner: D. Dinh

For: MULTIPLEXING VIDEO AND CONTROL SIGNALS ONTO UTP

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ATTN: BOX AF
Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action dated October 10, 2001, Applicants have the following comments.

Claims 1-5, 7-15, 17-25 and 27-31 are all the claims pending in the application. All of these claims stand rejected under 35 U.S.C. § 112, first paragraph, for non-enablement. Claims 1, 12-14, and 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Verhoeckx, made of record previously. Claims 1-5, 12-15, and 21-25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins, also made of record previously, and further in view of Verhoeckx. Claims 7, 17, and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins and Verhoeckx and further in view of Ramanathan, also made of record previously. Claims 8, 18, and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins, Verhoeckx, and

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Ramanathan, and further in view of Rangan, also made of record previously. Claims 9-11, 19-20, and 29-31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tompkins, Verhoeckx, and Ramanathan, and further in view of Stefik, also made of record previously.

Looking first at the prior art rejection, Applicants argue as follows.

Before discussing the Verhoeckx-based rejection in more detail, Applicants wish to address the Examiner's comments concerning the Tompkins and Verhoeckx combination, as it appears that the Examiner does not appear to have appreciated Applicants' point completely. The Examiner equates the enablement of the present application with that of Tompkins and Verhoeckx, but this does not answer all of the points that Applicants have made. By way of introductory summary, in the case of Tompkins, there is teaching of transmission of signals at around 70MHz and 170MHz, as Applicants discussed previously. Tompkins teaches transmitting such signals over coaxial cable. Tompkins expressly teaches away from transmitting such signals over UTP, and emphasizes transmitting such signals over coaxial cable. Verhoeckx specifically says that bandwidth over UTP is limited to 1 MHz. These two references together, then, teach away from transmitting signals at 70MHz or 170 MHz over UTP.

Putting aside any issue of whether the combination is enabling, the point remains that one reference, Verhoeckx, says that you cannot transmit such signals over UTP, and Tompkins says the same thing. Therefore, the references cannot possibly teach or suggest how to transmit signals at such frequencies over UTP. As a result, Applicants maintain that the Tompkins/Verhoeckx combination is insufficient for the purpose on which the Examiner has relied on it. Based on that insufficiency, all of claims 2-5, 7-11, 15, 17-20, 22-25, and 27-31 are

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patentable. Indeed, claims 1, 12-14, and 21 are patentable over this combination as well, but the Examiner also has relied on Verhoeckx alone against these last-mentioned claims, so Applicants now will address the deficiencies of Verhoeckx.

In the Office Action, the Examiner maintains that Verhoeckx teaches equivalent technology, to the extent that what Applicants are claiming is described in the present application. Alternatively, the Examiner asserts that the present application is not enabling. Applicants respectfully submit that the Examiner's focus is somewhat misplaced, as is hoped will be clear from the following discussion.

To begin, the table below compares Verhoeckx with the present invention.

Scope	Topic	Verhoeckx	Invention
High Level	Analog video over UTP	Low quality only; signal must be <1MHz bandwidth	High-Quality only; full NTSC bandwidth (4.5MHz)
	Video Phone System	"...relates to..."	Focus of invention
Detail	A Video source	Yes	Yes
	Plurality of displays	No	Yes
	Analog video signals from video source	Yes	Yes
	Digital control signals from a communications control component	No; <u>sync signals</u> are reorganized and reinserted into original sync timeslot in video signal. Sync signals do not control communications nor original from any communications control component, and no communications control component is provided in the specification.	Yes; extensive detail of communications control component given in specification.
	Multiplexing of analog video signal with digital control signals from communications control component	No; instead, <u>sync signals</u> , which are <u>not</u> communications control signals, are reorganized and reinserted into the original sync timeslot in the video signal	Yes
	Transmission of multiplexed signal over UTP	Yes, but the signal must have a bandwidth of <1MHz	Yes, but at provides for NTSC video signals (4.3MHz)
	Teaching of UTP transceivers	UTP transceivers of the day (circa 1974) assumed	UTP transceivers of the day (circa 1993) assumed

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One point that bears mentioning initially is that the disclosed and claimed invention is directed to a video teleconferencing system which includes all of the various components necessary to achieve the system. The specification provides focus for each of the various components, and the specification overall combines all of those components. In contrast, Verhoeckx deals with limited aspects of such systems. The point of Verhoeckx is to reorganize the transmission and restoration of video sync signals so that, with a video scan signal having a bandwidth less than 1MHz, the overall reorganized signal will occupy less than 1 MHz. Verhoeckx does not teach or even remotely suggest any communications control components, nor is Verhoeckx directed to an overall video teleconferencing system. No video signal transmission over UTP is taught – the actual signal transmitters and receivers of the day (~1974) are assumed.

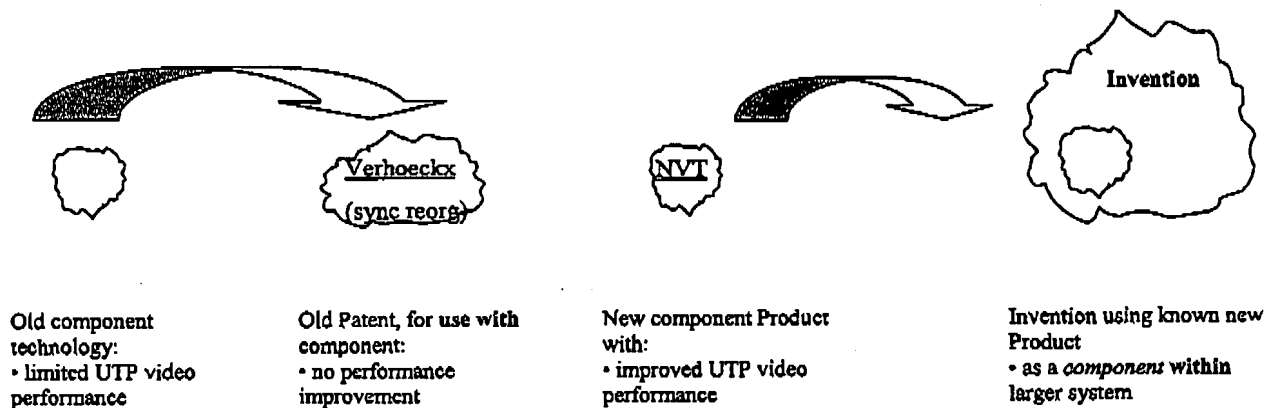
In contrast, the point of the present invention is the creation of a high-quality low cost video teleconferencing system using a common UTP path for both analog video signals and digital control signals provided by a communications control component. In contrast to the teachings of Verhoeckx, full NTSC bandwidth is provided for over UTP (at least 4.5MHz). Likewise, in contrast to Verhoeckx, extensive teachings are provided for communications control components and an overall video teleconferencing system.

The Examiner's arguments concerning the specification's alleged lack of enablement relative to Verhoeckx are believed misplaced, per the diagram below. Verhoeckx assumes UTP video transceiver components of its day and teaches how to reorganize the video signal's sync

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prior to transmission and reconstruct after reception in an arrangement *to be used with those UTP*
video transceiver components. In contrast, the present invention assumes UTP video
transceivers of its day and teaches and claims a high-quality low cost video teleconferencing
system using a common UTP path for both analog video signals and digital control signals
provided by communications control component in an arrangement *that uses those UTP video*
transceiver components. In this, the performance and parameter range of the old component and
old patent are unusable in the new invention.

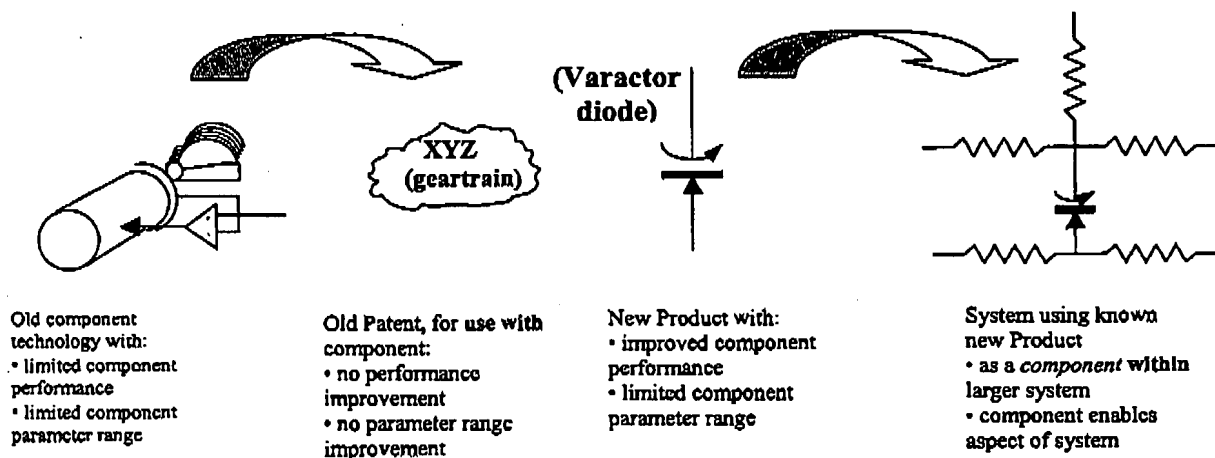


The Examiner's argument against the application can be recast in an analogous setting so as to show its inapplicability. Beginning with an old voltage-controlled capacitor technology employing a servo/motor arrangement operating a rotation-adjust variable capacitor, assume the existence of a XYZ grounded gear train patent to reorganize the mechanical drive-train and positioned for use with this old voltage-controlled capacitor technology. Later, non-mechanical varactor diode components are available which control AC capacitance via applied DC voltage (via band-gap space-charge variation), and these are used to create a systems invention that can

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use the performance and parameter ranges of the varactor but not those of the old voltage-controlled capacitor technology. In this case citing the XYZ patent against the new systems invention is inapplicable. As such, citing Verhoeckx against the application is similarly inapplicable.



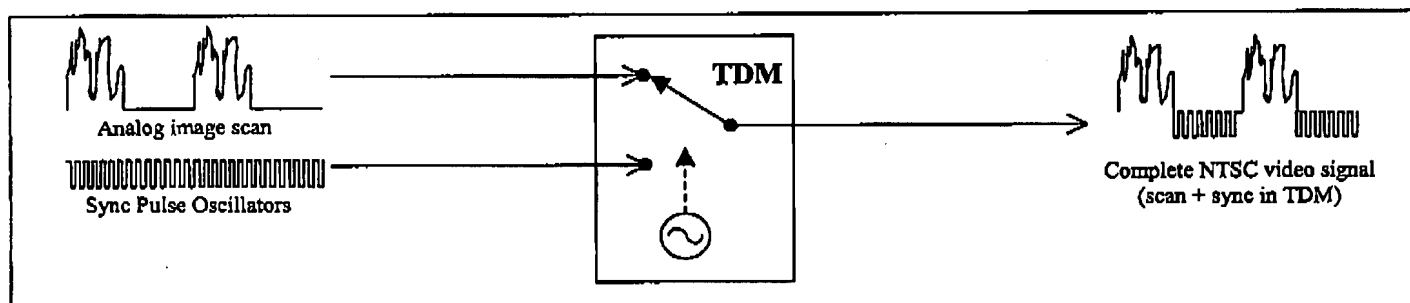
The analogy also pertains to the enablement argument made by the examiner. The UTP video transceiver components assumed by Verhoeckx were known components at the time of that invention and thus were not taught nor cited explicitly. Similarly, the UTP video transceiver components assumed in the invention were known components at the time of the invention and thus even though they were not taught nor cited explicitly. As such, as the Examiner, the invention is no less enabled in the invention's own environment than Verhoeckx is in Verhoeckx's much older environment.

Further as to the Examiner's position that Verhoeckx teaches the digital control signals from communications control component element, applicant maintains there is no

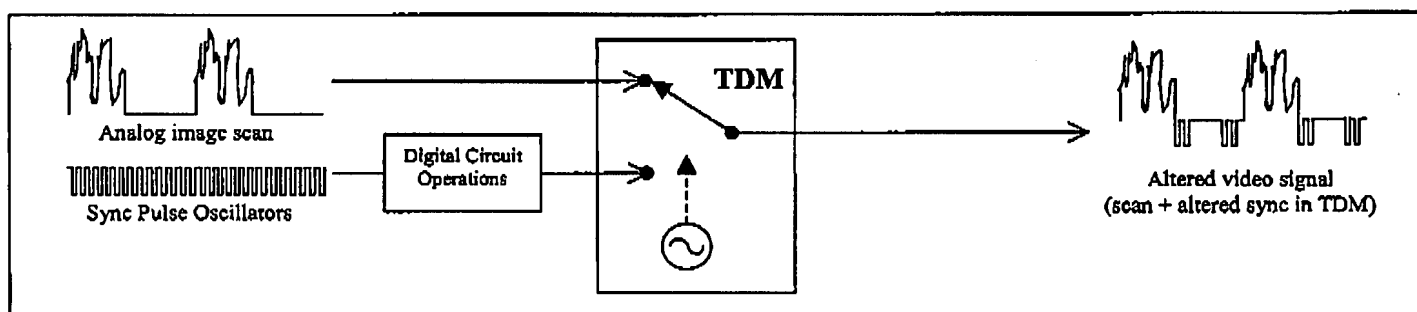
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correspondence between the technologies. In particular, the NTSC signal format inherently includes a Time-Division Multiplex arrangement cycling among analog scan information and digital scanning oscillator synchronization pulses.



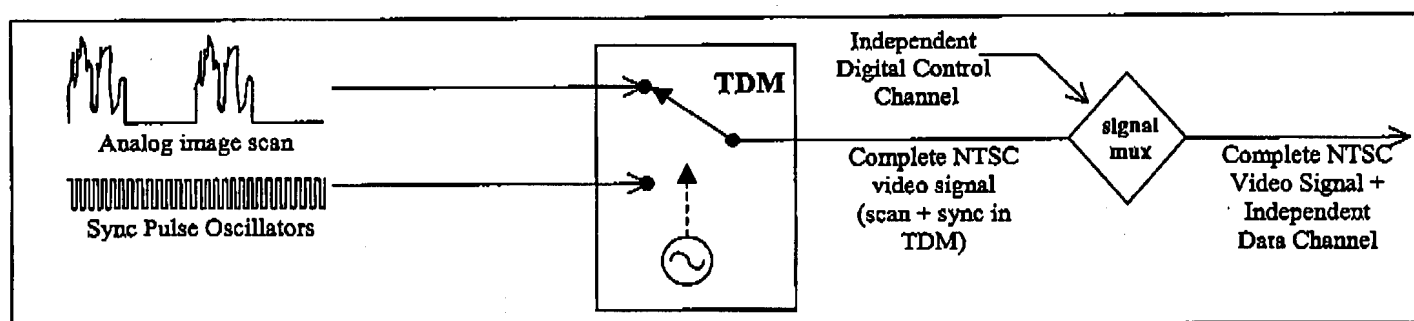
Verhoeckx teaches introduction of digital circuit operations on the scanning oscillator sync pulses to reduce sync signal bandwidth so that with a video scan signal bandwidth $< 1\text{ MHz}$ the overall reorganized signal will occupy $< 1\text{ MHz}$. These digital operations simply reorganize the synchronization signals themselves and in no way involve the introduction digital control signals from any sort of communications control component. Further, Verhoeckx teaches nowhere teaches a communications control component.



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In contrast, among other things, the claims of the present application recite multiplexing of a digital control signal from communications control components with an analog NTSC video signal. The communications control components are explicitly taught in the present application, and are clearly distinguishable, as a source of the digital control signal, by the invention.



Thus, although it is understandable that the Examiner may have felt there must be some similarity between the Verhoeckx reference and the applicants' invention and the incremental verbal rebuttals the applicants have made did not convince the Examiner to change his strongly held conviction, the detailed tabular and diagrammed differentiation provided above proves that Verhoeckx in no way applies to the applicants' invention.

In maintaining his rejection under 35 U.S.C. § 112, first paragraph, the Examiner has not responded directly to the points Applicants made in their last response. In particular, Applicants pointed to several places in the specification which Applicants contend contribute to the enabling nature of the specification. However, in his rejection, the Examiner has concluded, without elaboration, that the specification is not enabling. The Examiner's conclusory statements are not

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believed to advance the prosecution of the application, because in view of the lack of detail in the Examiner's response to the details that Applicants provided, Applicants are somewhat at a loss as to how to proceed.

To review some of the points made in the last response, Applicants believe that they were able to demonstrate that the transmission of TV-quality video over UTP is accomplished, *inter alia*, by following Applicants' teachings of a teleconference system having an Audio/Video (A/V) transceiver as described, for example, in FIG. 19 of the application. This point was highlighted in the Supplemental Response dated January 16, 2001 (*See* p. 2, para. 1). Further, there are several portions of the present application that describe a teleconferencing system that provides video signal transmission utilizing A/V transceivers 840, along with several different examples of UTP wiring formats that may be used in such a system. This point also was made in the January 16, 2001 Supplemental Response (*See* p. 3, paras 1-4).

Looking at these points more closely, in FIG. 19 of the present application, A/V transceivers 840 are shown having Video Out 841, Video In 842, Audio Out 843, and Audio In 844. FIG. 19 further shows that A/V Transceivers 840 further comprise port 845, which is ultimately connected to A/V Network (UTP) 901.

The present application also describes input and output of video signals through an A/V transceiver. Specifically, the application notes that video signals are passed as input into A/V Transceivers 840, and that A/V Transceivers 840 transform these video signals from standard video cable signals to UTP signals (Specification, pg. 23, para. 3). The A/V transceivers 840

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then send the UTP video signals, via port 845, onto AV Network (UTP) 901 (Specification, pg. 23, para. 3).

The present application further describes how an A/V transceiver processes video input. In a fashion similar to video output, video signals are received from AV Network (UTP) 901 through port 845 of A/V Transceivers 840 (Specification, pg. 23, para. 5 to pg. 24, para. 1). The video signals are then passed through A/V Transceivers 840 and sent out Video Out port 841, so that the video signals may ultimately be received by some display mechanism (Specification, pg. 24, para. 1).

Applicants further note that the use of UTP wiring for video signal transmission is specifically referred to in the present application. For example, workstations are described as communicating with LANs via commonly installed 4-pair UTP telephone wires, wherein one pair is used for incoming video with accompanying audio multiplexed in, another pair is used for outgoing multiplexed audio/video, and the remaining two pairs are used for carrying incoming and outgoing data (Specification, pg. 10, para. 3). Ludwig Decl., para. 16.

Specific examples of UTP wiring formats that may be used by the workstations also are described. The present application specifically notes that a 10BaseT Ethernet uses RJ-45 pins 1,2,4, and 6, leaving pins 3, 5, 7, and 8 available for two A/V twisted pairs, and that the resulting system is compatible with standard (AT&T 258A, EIA/TIA 568, 8p8C, 10BaseT, ISDN, 6P6C, etc.) telephone wiring (Specification, pg. 10, para. 3). Ludwig Decl., para. 17.

A/V transceivers 840 are also described in the application as potentially also having muxing/demuxing facilities to enable the transmission of audio/video signals on a single pair of

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wires (Specification, pg. 25, para. 1). The application even gives an example of how muxing/demuxing may take place, by noting the ability of the A/V transceiver to encode audio signals, digitally, in the vertical retrace interval of the analog video signal (Specification, pg. 25, para. 1).

Clearly, then the present application teaches that a device, such as an A/V transceiver 840, may be used to construct a teleconferencing system. A key point of the invention is the enabling of video communication at TV quality, and the foregoing structure, which is more comprehensive than anything shown in the prior art, points to the achievement of this capability.

Applicants acknowledge that the Examiner says, in the present Office Action, that he does not acknowledge "the similarity" between the disclosed system and the NVT-518 device (October 10, 2001 Office Action, p. 2). However, even this point is unclear. Applicants were not seeking to have the Examiner acknowledge identity between the disclosed system and the NVT-518 device. Rather, Applicants had the clear understanding, at the May 15, 2001 interview, that the Examiner acknowledged some of the similarities between Applicant's disclosed A/V transceivers 840 and one of the A/V transceivers (i.e., NVT Model 518A Video Transceiver) that was publicly available as of the effective filing date of the present application. In particular, the Examiner appeared to acknowledge that several features of A/V transceivers 840, such as the A/V ports, wiring formats, and performance features (e.g., TV-quality video signal transmission over UTP), appeared to be similar to what was described in the NVT 518A specification sheet.

As to whether the Examiner agrees that the foregoing similarities are sufficient to render the present application enabling, Applicants acknowledge that that may be an open issue. However, as

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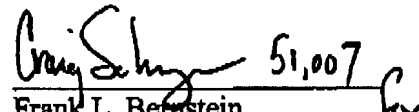
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to the foregoing physical similarities, Applicants had believed that the Examiner had at least made some acknowledgement.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,


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Date: March 11, 2002

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this RESPONSE UNDER 37 C.F.R. § 1.116 is being facsimile transmitted to the U.S. Patent and Trademark Office this 11th day of March, 2002.


Thea K. Wagner